



- 1 -

SEQUENCE LISTING

<110> Lin, Biaoyang

<120> Androgen Regulated Prostate Specific
Nucleic Acids

<130> P-IS 4373

<140> US 09/821,812

<141> 2001-03-28

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<213> Homo sapiens

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| Glu Pro Gln Val Tyr Ala Pro Pro Arg Pro Thr Asp Arg Leu Ala Val | |
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| | | | 20 | | | | | 25 | | | | 30 | Lys |
| Ser | Ala | Arg | Ser | Phe | Ile | Ser | Arg | His | Ser | Gln | Gly | Arg | Arg |
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| Asp | Ala | Leu | Ser | Ser | Glu | Gly | Cys | Leu | Trp | Pro | Ser | Glu | Ser |
| | 50 | | | | 55 | | | | | 60 | | | Thr |
| Ser | Gly | Asn | Gly | Ile | Pro | Glu | Pro | Gln | Val | Tyr | Ala | Pro | Pro |
| 65 | | | | 70 | | | | 75 | | | | | 80 |
| Thr | Asp | Arg | Leu | Ala | Val | Pro | Pro | Phe | Ala | Gln | Arg | Glu | Arg |
| | | | 85 | | | | | 90 | | | | 95 | Phe |
| Arg | Phe | Gln | Pro | Thr | Tyr | Pro | Tyr | Leu | Gln | His | Glu | Ile | Asp |
| | | 100 | | | | | 105 | | | | | 110 | Leu |
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| | | 115 | | | | 120 | | | | | 125 | | Gln |
| Pro | Cys | Thr | Leu | Gln | Leu | Arg | Asp | Pro | Glu | Gln | Gln | Leu | Glu |
| | 130 | | | | 135 | | | | | 140 | | | Leu |
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| 145 | | | | 150 | | | | 155 | | | | | 160 |
| Leu | Met | Asp | Ser | Ala | Arg | Leu | Gly | Gly | Pro | Cys | Pro | Pro | Ser |
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<221> misc_feature
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| Gly | Gly | Leu | Thr | Thr | Thr | Val | Ile | Gly | Thr | Arg | Leu | Gly | Val | Asp | Arg | | |
| 1 | | | 5 | | | 10 | | | 15 | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| cgc | agg | ctc | tcc | tgg | agc | gct | ggg | cct | tgc | ctg | gcc | gca | cgc | gca | gcc | 96 | |
| Pro | Arg | Leu | Ser | Trp | Ser | Ala | Gly | Pro | Ser | Leu | Ala | Ala | Pro | Ala | Ala | | |
| 20 | | | 25 | | | 30 | | | | | | | | | | | |
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| atg | agc | tgc | gag | atg | gag | cgc | ctg | ctc | ctg | gcc | tgg | agc | tat | ttt | agg | 144 | |
| Met | Ser | Ser | Glu | Met | Glu | Pro | Leu | Leu | Leu | Ala | Trp | Ser | Tyr | Phe | Arg | | |
| 35 | | | 40 | | | 45 | | | | | | | | | | | |
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| cgc | agg | aag | ttc | cag | ctc | tgc | gcc | gat | cta | tgc | acg | cag | atg | ctg | gag | 192 | |
| Arg | Arg | Lys | Phe | Gln | Leu | Cys | Ala | Asp | Leu | Cys | Thr | Gln | Met | Leu | Glu | | |
| 50 | | | 55 | | | 60 | | | | | | | | | | | |
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| aag | tcc | cct | tat | gac | cag | gca | gct | tgg | atc | tta | aaa | gca | aga | gcg | cta | 240 | |
| Lys | Ser | Pro | Tyr | Asp | Gln | Ala | Ala | Trp | Ile | Leu | Lys | Ala | Arg | Ala | Leu | | |
| 65 | | | 70 | | | 75 | | | 80 | | | | | | | | |
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| aca | gaa | atg | gta | tac | ata | gat | gaa | att | gat | gta | gat | cag | gaa | gga | att | 288 | |
| Thr | Glu | Met | Val | Tyr | Ile | Asp | Glu | Ile | Asp | Val | Asp | Gln | Glu | Gly | Ile | | |
| 85 | | | 90 | | | 95 | | | | | | | | | | | |
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| gca | gaa | atg | atg | ctg | gat | gaa | aat | gct | ata | gct | caa | gtt | cca | cgc | cct | 336 | |
| Ala | Glu | Met | Met | Leu | Asp | Glu | Asn | Ala | Ile | Ala | Gln | Val | Pro | Arg | Pro | | |
| 100 | | | 105 | | | 110 | | | | | | | | | | | |

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| Gln Ala Val Arg Pro Ile Thr Gln Ala Gly Arg Pro Ile Thr Gly Phe | |
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| Asp Gly Pro Phe Ile Asn Leu Ser Arg Leu Asn Leu Thr Lys Tyr Ser | |
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| Val Tyr Val Ser Leu Asp Gln Pro Val Thr Ala Leu Asn Leu Phe Lys | |
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| Gln Gly Leu Asp Lys Phe Pro Gly Glu Val Thr Leu Leu Cys Gly Ile | |
| 305 310 315 320 | |
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| Gln Leu Arg Gln His Phe Ala Met Leu | |

530

535

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<211> 537

<212> PRT

<213> Homo sapiens

<220>

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Met Ser Ser Glu Met Glu Pro Leu Leu Ala Trp Ser Tyr Phe Arg
35          40          45
Arg Arg Lys Phe Gln Leu Cys Ala Asp Leu Cys Thr Gln Met Leu Glu
50          55          60
Lys Ser Pro Tyr Asp Gln Ala Ala Trp Ile Leu Lys Ala Arg Ala Leu
65          70          75          80
Thr Glu Met Val Tyr Ile Asp Glu Ile Asp Val Asp Gln Glu Gly Ile
85          90          95
Ala Glu Met Met Leu Asp Glu Asn Ala Ile Ala Gln Val Pro Arg Pro
100         105         110
Gly Thr Ser Leu Lys Leu Pro Gly Thr Asn Gln Thr Gly Gly Pro Ser
115         120         125
Gln Ala Val Arg Pro Ile Thr Gln Ala Gly Arg Pro Ile Thr Gly Phe
130         135         140
Leu Arg Pro Ser Thr Gln Ser Gly Arg Pro Gly Thr Met Glu Gln Ala
145         150         155         160
Ile Arg Thr Pro Arg Thr Ala Tyr Thr Ala Arg Pro Ile Thr Ser Ser
165         170         175
Ser Gly Arg Phe Val Arg Leu Gly Thr Ala Ser Met Leu Thr Ser Pro
180         185         190
Asp Gly Pro Phe Ile Asn Leu Ser Arg Leu Asn Leu Thr Lys Tyr Ser
195         200         205
Gln Lys Pro Lys Leu Ala Lys Ala Cys Leu Ser Ile Ser Phe Ile Met
210         215         220
Lys Met Met Leu Arg Leu Leu Trp Ile Trp Leu Ala Leu Ser Thr Glu
```


| | | | | | | |
|---|-----|-----|-----|-----|-----|-----|
| 225 | | 230 | | 235 | | 240 |
| His Ser Gln Tyr Lys Asp Trp Trp Trp Lys Val Gln Ile Gly Lys Cys | | | | | | |
| | 245 | | 250 | | 255 | |
| Tyr Tyr Arg Leu Gly Met Tyr Arg Glu Ala Glu Lys Gln Phe Lys Ser | | | | | | |
| | 260 | | 265 | | 270 | |
| Ala Leu Lys Gln Gln Glu Met Val Asp Thr Phe Leu Tyr Leu Ala Lys | | | | | | |
| | 275 | | 280 | | 285 | |
| Val Tyr Val Ser Leu Asp Gln Pro Val Thr Ala Leu Asn Leu Phe Lys | | | | | | |
| | 290 | | 295 | | 300 | |
| Gln Gly Leu Asp Lys Phe Pro Gly Glu Val Thr Leu Leu Cys Gly Ile | | | | | | |
| 305 | | 310 | | 315 | | 320 |
| Ala Arg Ile Tyr Glu Met Asn Asn Met Ser Ser Ala Ala Glu Tyr | | | | | | |
| | 325 | | 330 | | 335 | |
| Tyr Lys Glu Val Leu Lys Gln Asp Asn Thr His Val Xaa Ala Ile Ala | | | | | | |
| | 340 | | 345 | | 350 | |
| Cys Ile Gly Ser Asn His Phe Tyr Ser Asp Gln Pro Glu Ile Ala Leu | | | | | | |
| | 355 | | 360 | | 365 | |
| Arg Phe Tyr Arg Arg Leu Leu Gln Met Gly Ile Tyr Asn Gly Gln Leu | | | | | | |
| | 370 | | 375 | | 380 | |
| Phe Asn Asn Leu Gly Leu Cys Cys Phe Tyr Ala Gln Gln Tyr Asp Met | | | | | | |
| 385 | | 390 | | 395 | | 400 |
| Thr Leu Thr Ser Phe Glu Arg Ala Leu Ser Leu Ala Glu Asn Glu Glu | | | | | | |
| | 405 | | 410 | | 415 | |
| Glu Ala Ala Asp Val Trp Tyr Asn Leu Gly His Val Ala Val Gly Ile | | | | | | |
| | 420 | | 425 | | 430 | |
| Gly Asp Thr Asn Leu Ala His Gln Cys Phe Arg Leu Ala Leu Val Asn | | | | | | |
| | 435 | | 440 | | 445 | |
| Asn Asn Asn His Ala Glu Ala Tyr Asn Asn Leu Ala Val Leu Glu Met | | | | | | |
| | 450 | | 455 | | 460 | |
| Arg Lys Gly His Val Glu Gln Ala Arg Ala Leu Leu Gln Thr Ala Ser | | | | | | |
| 465 | | 470 | | 475 | | 480 |
| Ser Leu Ala Pro His Met Tyr Glu Pro His Phe Asn Phe Ala Thr Ile | | | | | | |
| | 485 | | 490 | | 495 | |
| Ser Asp Lys Ile Gly Asp Leu Gln Arg Ser Tyr Val Ala Ala Gln Lys | | | | | | |
| | 500 | | 505 | | 510 | |
| Ser Glu Ala Ala Phe Pro Asp His Val Asp Thr Gln His Leu Ile Lys | | | | | | |
| | 515 | | 520 | | 525 | |
| Gln Leu Arg Gln His Phe Ala Met Leu | | | | | | |
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<210> 6

<211> 4433

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1)...(423)

<400> 6

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|---|-----|-----|-----|------|
| tac ctc aca gtg tgc caa gtt act cga gtc tat atc ttt gac tat gga | | | | 96 |
| Tyr Leu Thr Val Cys Gln Val Thr Arg Val Tyr Ile Phe Asp Tyr Gly | | | | |
| | 20 | 25 | 30 | |
| caa tat tct gct gat ttt tca ggc cca atg atg atc att act cag aag | | | | 144 |
| Gln Tyr Ser Ala Asp Phe Ser Gly Pro Met Met Ile Ile Thr Gln Lys | | | | |
| | 35 | 40 | 45 | |
| atc act agt ttg gct tgc gaa ata cat gat ggg atg ttt cgg aag gat | | | | 192 |
| Ile Thr Ser Leu Ala Cys Glu Ile His Asp Gly Met Phe Arg Lys Asp | | | | |
| | 50 | 55 | 60 | |
| gaa gaa ctg act tcc tca cag agg gat tta gct gta agg cgc atg cca | | | | 240 |
| Glu Glu Leu Thr Ser Ser Gln Arg Asp Leu Ala Val Arg Arg Met Pro | | | | |
| | 65 | 70 | 75 | 80 |
| agc tta ctg gag tat ttg agt tac aac tgt aac ttc atg ggg atc ctg | | | | 288 |
| Ser Leu Leu Glu Tyr Leu Ser Tyr Asn Cys Asn Phe Met Gly Ile Leu | | | | |
| | 85 | 90 | 95 | |
| gca ggc cca ctt tgc tct tac aaa gac tac att act ttc att gaa ggc | | | | 336 |
| Ala Gly Pro Leu Cys Ser Tyr Lys Asp Tyr Ile Thr Phe Ile Glu Gly | | | | |
| | 100 | 105 | 110 | |
| aga tca tac cat atc aca caa tct ggt gaa aat gga aaa gaa gag aca | | | | 384 |
| Arg Ser Tyr His Ile Thr Gln Ser Gly Glu Asn Gly Lys Glu Glu Thr | | | | |
| | 115 | 120 | 125 | |
| cag tat gaa aga aca gag cca tct cca aat gta agg tca tgagatttat | | | | 433 |
| Gln Tyr Glu Arg Thr Glu Pro Ser Pro Asn Val Arg Ser | | | | |
| | 130 | 135 | 140 | |
| ctggagcctt tacagcatgt attgactgcg gktgttcaga agctcttagt ttgtgggctg | | | | 493 |
| tccttggttat ttcacttgac catctgtaca acattacctg tggagtacaa cattgatgag | | | | 553 |
| cattttcaag ctacagcttc gtggccaaca aagattatct atctgtatat ctctcttttg | | | | 613 |
| gctgccagac ccaaatacta ttttgcatgg acgctagctg actgccatwa ataatgctgc | | | | 673 |
| aggcttttgt ttccagagggt atgacgaaaa tggagcagct cgctgggact taatttccaa | | | | 733 |
| tttgagaatt caacaaatag agatgtcaac aagtttcaag atgtttcttg ataattggaa | | | | 793 |
| tattcagaca gctctttggc tcaaaaagggtg cgttccttca aaaacgatct ttagatgtgc | | | | 853 |
| tttggcgtct agttctcgag gttgagcttc attgagttca ggttcttgat taaattaacg | | | | 913 |
| gtgttgagtg acattgtgac ctccagtgtca gccgggaaac actgttagcc tcctcctaag | | | | 973 |
| caagtccagta tcgaatgaga actatttttg cttgagtcac gaatgcagct atcctgcagg | | | | 1033 |
| tgcagctatc ctgccctctc aagcctcctt taaaggcctc tgccaatgtc agaggtcacc | | | | 1093 |
| agtatcctcc tttgcagctc ctgatttgtt tcagtagaga tgtgggtttaa attaacaagt | | | | 1153 |
| gcctgcacaa gcacagtact tatgcctggg tactccagaa cagtcctggg tttaaatatt | | | | 1213 |
| tcaattcaac aaatcttkat ttgttaggca agggaaacaa acatgagtaa gataaaaaaga | | | | 1273 |
| ctcagctcct gaaagtgaaa gagttcacaa ttttattaaa gacacggtgg tgtaatcaga | | | | 1333 |
| cacatgctgt tcctgtgtgt gaggatgagg agagagaaaag caggaacagc gagggcacag | | | | 1393 |
| agggatgcgg gaagaacttc ctacaagtgt ggggtgcttga gctgaggttt gtgtcaggag | | | | 1453 |
| cgtgtctcgt gaacagggca aggtagaggc aagccaggct ggggtggagta acagggtcga | | | | 1513 |
| aggacagagc tggggaacag cacactctcc caggggttct cttatcgtcc ctgtgagcac | | | | 1573 |

| | | | | | | |
|-------------|-------------|-------------|------------|-------------|------------|------|
| attgccctat | cttgaattta | cttcataaaa | aacggccct | ataacgatac | ggtgataagc | 1633 |
| agcctttttt | tatagtgtcc | ttttttaaat | gacaaattaa | acatctttat | cccttgagat | 1693 |
| ggctagcata | cgctgtcatc | tcttcacagt | gcctggcagt | ctccccagt | gctgcagatc | 1753 |
| ctctgagcta | atctgttgtg | ttattttttg | ttattgttat | aattttaaatt | tgatacctta | 1813 |
| ggggaaactt | tattttcagc | tgagttctct | atccctgtca | tagaagaatt | gtagactaag | 1873 |
| cacagtctat | ctgccggaag | gagtagtggt | attaggtcag | ttgaaagtta | ttgatttttt | 1933 |
| ttaaataaaa | taatgtagga | taaaagcaac | cttactcttt | ttgtaaattg | tatagactcc | 1993 |
| caaatactag | aatgatcat | ttaagttact | atatatacca | atatatatac | tatatatacc | 2053 |
| aataagaaga | tgagaattaa | ctttatgttc | ctaaatttga | cacttaatag | ctatagcctc | 2113 |
| cctgagatca | tagagaagt | attgcctaag | ataagttgta | tttgtttttc | tagttaccct | 2173 |
| aaatcctgtc | aggtaataaa | agaatgatca | ttgcaggctt | tgtaaacctc | ggtcactcac | 2233 |
| tccacttggc | tctccatggt | tttcatgggt | tctagggtgt | gttatgaacg | aacctccttc | 2293 |
| agtccaacta | tccagacgtt | cattctctct | gccatttggc | acgggggtata | cccaggatat | 2353 |
| tatctaactg | ttctaacagg | ggtgttaaat | acattagcag | caagagctgt | aagtatcaag | 2413 |
| aattttat | tacaattcaa | tgggtccact | gaactgttaa | aaaggctgag | tacatctctc | 2473 |
| ttacaaggta | gacctctttt | ccttggctgt | ggtcagttat | gtcctttcca | ctagaagcga | 2533 |
| ggtgtgtact | gcgtgcatgt | ttgctgagcg | ctcaccacgg | gctaggctcc | atgcccagtt | 2593 |
| cctgtgagga | gaaaacacgt | ttctatgtgc | ccggcaggta | ggaggcactc | acaaaatggt | 2653 |
| actttgtctt | tacagaat | tctgaaggag | agataaaaac | tgagttaaat | aaagatgac | 2713 |
| agaatggatg | agaaataact | ttagacatta | tttcattgaa | ccttcccaac | tgaaattatt | 2773 |
| ttatgatgtt | ataacatgga | tagtaactca | agtagcaata | agttacacag | ttgtgccatt | 2833 |
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| cattcttggg | atcttagtat | tattgttgtt | gccagtga | aaaactcaa | gaagaaagaa | 2953 |
| tacacatgaa | aacattcagc | tctcacaatc | caaaaagttt | gatgaaggag | aaaattcttt | 3013 |
| gggacagaac | agtttttcta | caacaaacaa | tgtttgcaat | cagaatcaag | aaatagcctc | 3073 |
| gagacattca | tactaaagc | agtgateggg | aaggctctga | gggctgtttt | ttttttttga | 3133 |
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| agtggtgata | tttttaaaat | gcaataaaca | tctcagtatt | tgaagggttt | tcttaaagta | 3673 |
| tgtcaaatga | ctacaatcca | tagtgaaact | gtaaacagta | atggacgcca | aattataggt | 3733 |
| agctgatttt | gctggagagt | ttaattacct | tgtgcagtca | aagagcgctt | ccagaaggaa | 3793 |
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| aaagagagag | gtgacgaagg | aaggcaggaa | tgaagaagca | ctgcgtggcc | tccggtggaa | 3913 |
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| ctcaaagggt | ttgaaagaga | aatcgctagg | taggttacta | tctggcta | ccatttctta | 4153 |
| tcttgacaa | tttaattcat | atttgggaaa | cttttaggga | aatgaaaaat | aaaagtcact | 4213 |
| gagtcgtggg | gacatttttt | aagaataata | ttaattcagt | ttcaaactct | tctcacatta | 4273 |
| aaattttgct | gtgaactctt | actaaaatga | gttttaggtt | ctgtaagtgg | aaaaatgtgc | 4333 |
| ttttatttta | tgggccattt | ttaccacaac | taatcttgcc | ttggattact | aagcatctcc | 4393 |
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<210> 7

<211> 141

<212> PRT

<213> Homo sapiens

<400> 7

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| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Tyr | Leu | Thr | Val | Cys | Gln | Val | Thr | Arg | Val | Tyr | Ile | Phe | Asp | Tyr | Gly |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Gln | Tyr | Ser | Ala | Asp | Phe | Ser | Gly | Pro | Met | Met | Ile | Ile | Thr | Gln | Lys |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Ile | Thr | Ser | Leu | Ala | Cys | Glu | Ile | His | Asp | Gly | Met | Phe | Arg | Lys | Asp |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Glu | Glu | Leu | Thr | Ser | Ser | Gln | Arg | Asp | Leu | Ala | Val | Arg | Arg | Met | Pro |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 |
| Ser | Leu | Leu | Glu | Tyr | Leu | Ser | Tyr | Asn | Cys | Asn | Phe | Met | Gly | Ile | Leu |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Ala | Gly | Pro | Leu | Cys | Ser | Tyr | Lys | Asp | Tyr | Ile | Thr | Phe | Ile | Glu | Gly |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Arg | Ser | Tyr | His | Ile | Thr | Gln | Ser | Gly | Glu | Asn | Gly | Lys | Glu | Glu | Thr |
| | | 115 | | | | 120 | | | | | | 125 | | | |
| Gln | Tyr | Glu | Arg | Thr | Glu | Pro | Ser | Pro | Asn | Val | Arg | Ser | | | |
| | 130 | | | | | 135 | | | | | 140 | | | | |

<210> 8

<211> 1276

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1)...(1275)

<221> misc_feature

<222> (1)...(1276)

<223> n = A,T,C or G

<400> 8

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| Ile | Gly | Val | Glu | Asn | Met | His | Asn | Tyr | Cys | Phe | Val | Phe | Ala | Leu | Gly | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | | |
| tac | ctc | aca | gtg | tgc | caa | gtt | act | cga | gtc | tat | atc | ttt | gac | tat | gga | 96 |
| Tyr | Leu | Thr | Val | Cys | Gln | Val | Thr | Arg | Val | Tyr | Ile | Phe | Asp | Tyr | Gly | |
| | | | 20 | | | | | 25 | | | | | 30 | | | |
| caa | tat | tct | gct | gat | ttt | tca | ggc | cca | atg | atg | atc | att | act | cag | aag | 144 |
| Gln | Tyr | Ser | Ala | Asp | Phe | Ser | Gly | Pro | Met | Met | Ile | Ile | Thr | Gln | Lys | |
| | | 35 | | | | | 40 | | | | | 45 | | | | |
| atc | act | agt | ttg | gct | tgc | gaa | ata | cat | gat | ggg | atg | ttt | cgg | aag | gat | 192 |
| Ile | Thr | Ser | Leu | Ala | Cys | Glu | Ile | His | Asp | Gly | Met | Phe | Arg | Lys | Asp | |
| | | 50 | | | | 55 | | | | 60 | | | | | | |
| gaa | gaa | ctg | act | tcc | tca | cag | agg | gat | tta | gct | gta | agg | cgc | atg | cca | 240 |

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Glu | Leu | Thr | Ser | Ser | Gln | Arg | Asp | Leu | Ala | Val | Arg | Arg | Met | Pro | |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 | |
| agc | tta | ctg | gag | tat | ttg | agt | tac | aac | tgt | aac | ttc | atg | ggg | atc | ctg | 288 |
| Ser | Leu | Leu | Glu | Tyr | Leu | Ser | Tyr | Asn | Cys | Asn | Phe | Met | Gly | Ile | Leu | |
| | | | | 85 | | | | 90 | | | | | 95 | | | |
| gca | ggc | cca | ctt | tgc | tct | tac | aaa | gac | tac | att | act | ttc | att | gaa | ggc | 336 |
| Ala | Gly | Pro | Leu | Cys | Ser | Tyr | Lys | Asp | Tyr | Ile | Thr | Phe | Ile | Glu | Gly | |
| | | | 100 | | | | | 105 | | | | | 110 | | | |
| aga | tca | tac | cat | atc | aca | caa | tct | ggg | gaa | aat | gga | aaa | gaa | gag | aca | 384 |
| Arg | Ser | Tyr | His | Ile | Thr | Gln | Ser | Gly | Glu | Asn | Gly | Lys | Glu | Glu | Thr | |
| | | 115 | | | | | 120 | | | | | 125 | | | | |
| cag | tat | gaa | aga | aca | gna | gcc | atc | tcc | aaa | tgt | aag | gtc | atg | aga | ttt | 432 |
| Gln | Tyr | Glu | Arg | Thr | Xaa | Ala | Ile | Ser | Lys | Cys | Lys | Val | Met | Arg | Phe | |
| | 130 | | | | | 135 | | | | | 140 | | | | | |
| atc | tgg | agc | ctt | tac | agc | atg | tat | tgn | act | gcg | gkt | gtt | cag | aag | ctc | 480 |
| Ile | Trp | Ser | Leu | Tyr | Ser | Met | Tyr | Xaa | Thr | Ala | Xaa | Val | Gln | Lys | Leu | |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 | |
| tta | gtt | tgt | ggg | ctg | tcc | ttg | tta | ttt | cac | ttg | acc | atc | tgt | aca | aca | 528 |
| Leu | Val | Cys | Gly | Leu | Ser | Leu | Leu | Phe | His | Leu | Thr | Ile | Cys | Thr | Thr | |
| | | | | 165 | | | | | 170 | | | | | 175 | | |
| tta | cct | gtg | gag | tac | aac | att | gat | gag | cat | ttt | caa | gct | aca | gct | tcg | 576 |
| Leu | Pro | Val | Glu | Tyr | Asn | Ile | Asp | Glu | His | Phe | Gln | Ala | Thr | Ala | Ser | |
| | | | 180 | | | | | 185 | | | | | 190 | | | |
| tgg | cca | aca | aag | att | atc | tat | ctg | tat | atc | tct | ctt | ttg | gct | gcc | aga | 624 |
| Trp | Pro | Thr | Lys | Ile | Ile | Tyr | Leu | Tyr | Ile | Ser | Leu | Leu | Ala | Ala | Arg | |
| | | 195 | | | | | 200 | | | | | 205 | | | | |
| ccc | aaa | tac | tat | ttt | gca | tgg | acg | cta | gct | gat | gcc | att | aat | aat | gct | 672 |
| Pro | Lys | Tyr | Tyr | Phe | Ala | Trp | Thr | Leu | Ala | Asp | Ala | Ile | Asn | Asn | Ala | |
| | 210 | | | | | 215 | | | | | 220 | | | | | |
| gca | ggc | ttt | ggg | ttc | aga | ggg | tat | gac | gaa | aat | gga | gca | gct | cgc | tgg | 720 |
| Ala | Gly | Phe | Gly | Phe | Arg | Gly | Tyr | Asp | Glu | Asn | Gly | Ala | Ala | Arg | Trp | |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 | |
| gac | tta | att | tcc | aat | ttg | aga | att | caa | caa | ata | gag | atg | tca | aca | agt | 768 |
| Asp | Leu | Ile | Ser | Asn | Leu | Arg | Ile | Gln | Gln | Ile | Glu | Met | Ser | Thr | Ser | |
| | | | | 245 | | | | | 250 | | | | | 255 | | |
| ttc | aag | atg | ttt | ctt | gat | aat | tgg | aat | att | cag | aca | gct | ctt | tgg | ccc | 816 |
| Phe | Lys | Met | Phe | Leu | Asp | Asn | Trp | Asn | Ile | Gln | Thr | Ala | Leu | Trp | Pro | |
| | | | 260 | | | | | 265 | | | | | 270 | | | |
| aaa | agg | gtg | tgt | tat | gaa | cga | acc | tcc | ttc | agt | cca | act | atc | cag | acg | 864 |
| Lys | Arg | Val | Cys | Tyr | Glu | Arg | Thr | Ser | Phe | Ser | Pro | Thr | Ile | Gln | Thr | |

| 275 | 280 | 285 | |
|---|-----|-----|------|
| ttc att ctc cct gcc att ntg gca cgg ggt ata ccc agg ata tta tct | | | 912 |
| Phe Ile Leu Pro Ala Ile Xaa Ala Arg Gly Ile Pro Arg Ile Leu Ser | | | |
| 290 | 295 | 300 | |
| aac gtt tct aac agg ggt gtt aat gac att agc agc aga gct atg aga | | | 960 |
| Asn Val Ser Asn Arg Gly Val Asn Asp Ile Ser Ser Arg Ala Met Arg | | | |
| 305 | 310 | 315 | 320 |
| aat aac ttt aga cat tat ttc att gaa cct tcc caa ctg aaa tta ttt | | | 1008 |
| Asn Asn Phe Arg His Tyr Phe Ile Glu Pro Ser Gln Leu Lys Leu Phe | | | |
| | 325 | 330 | 335 |
| tat gat gtt mta aca tgg ata gta aac tca agt agc aat aag tta cac | | | 1056 |
| Tyr Asp Val Xaa Thr Trp Ile Val Asn Ser Ser Ser Asn Lys Leu His | | | |
| | 340 | 345 | 350 |
| agk tgk gsc att tgt gct tct ttc tat waa acc atc act cac rkt tya | | | 1104 |
| Xaa Xaa Xaa Ile Cys Ala Ser Phe Tyr Xaa Thr Ile Thr His Xaa Xaa | | | |
| | 355 | 360 | 365 |
| cag gtc cgg ttt att gcc gga cat act ggt tcc tcg ata atg gcg tgc | | | 1152 |
| Gln Val Arg Phe Ile Ala Gly His Thr Gly Ser Ser Ile Met Ala Cys | | | |
| | 370 | 375 | 380 |
| cgg aca acg cgg aga aag gta ctg gaa gtt ccg ctc cac caa gtc gtg | | | 1200 |
| Arg Thr Thr Arg Arg Lys Val Leu Glu Val Pro Leu His Gln Val Val | | | |
| 385 | 390 | 395 | 400 |
| ggg gac act tgg gac agc tct tcc aca agc gcg ccg aag ccg gac aca | | | 1248 |
| Gly Asp Thr Trp Asp Ser Ser Ser Thr Ser Ala Pro Lys Pro Asp Thr | | | |
| | 405 | 410 | 415 |
| acg acg ggg cgg ggg ggt ggg gca acc c | | | 1276 |
| Thr Thr Gly Arg Gly Gly Gly Ala Thr | | | |
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5

10

15

Tyr Leu Thr Val Cys Gln Val Thr Arg Val Tyr Ile Phe Asp Tyr Gly

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | | | | 20 | | | | 25 | | | | | 30 | | |
| Gln | Tyr | Ser | Ala | Asp | Phe | Ser | Gly | Pro | Met | Met | Ile | Ile | Thr | Gln | Lys |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Ile | Thr | Ser | Leu | Ala | Cys | Glu | Ile | His | Asp | Gly | Met | Phe | Arg | Lys | Asp |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Glu | Glu | Leu | Thr | Ser | Ser | Gln | Arg | Asp | Leu | Ala | Val | Arg | Arg | Met | Pro |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 |
| Ser | Leu | Leu | Glu | Tyr | Leu | Ser | Tyr | Asn | Cys | Asn | Phe | Met | Gly | Ile | Leu |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Ala | Gly | Pro | Leu | Cys | Ser | Tyr | Lys | Asp | Tyr | Ile | Thr | Phe | Ile | Glu | Gly |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Arg | Ser | Tyr | His | Ile | Thr | Gln | Ser | Gly | Glu | Asn | Gly | Lys | Glu | Glu | Thr |
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| Gln | Tyr | Glu | Arg | Thr | Xaa | Ala | Ile | Ser | Lys | Cys | Lys | Val | Met | Arg | Phe |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Ile | Trp | Ser | Leu | Tyr | Ser | Met | Tyr | Xaa | Thr | Ala | Xaa | Val | Gln | Lys | Leu |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| Leu | Val | Cys | Gly | Leu | Ser | Leu | Leu | Phe | His | Leu | Thr | Ile | Cys | Thr | Thr |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Leu | Pro | Val | Glu | Tyr | Asn | Ile | Asp | Glu | His | Phe | Gln | Ala | Thr | Ala | Ser |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Trp | Pro | Thr | Lys | Ile | Ile | Tyr | Leu | Tyr | Ile | Ser | Leu | Leu | Ala | Ala | Arg |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Pro | Lys | Tyr | Tyr | Phe | Ala | Trp | Thr | Leu | Ala | Asp | Ala | Ile | Asn | Asn | Ala |
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| Ala | Gly | Phe | Gly | Phe | Arg | Gly | Tyr | Asp | Glu | Asn | Gly | Ala | Ala | Arg | Trp |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 |
| Asp | Leu | Ile | Ser | Asn | Leu | Arg | Ile | Gln | Gln | Ile | Glu | Met | Ser | Thr | Ser |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Phe | Lys | Met | Phe | Leu | Asp | Asn | Trp | Asn | Ile | Gln | Thr | Ala | Leu | Trp | Pro |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Lys | Arg | Val | Cys | Tyr | Glu | Arg | Thr | Ser | Phe | Ser | Pro | Thr | Ile | Gln | Thr |
| | | 275 | | | | | 280 | | | | | 285 | | | |
| Phe | Ile | Leu | Pro | Ala | Ile | Xaa | Ala | Arg | Gly | Ile | Pro | Arg | Ile | Leu | Ser |
| | 290 | | | | | 295 | | | | | 300 | | | | |
| Asn | Val | Ser | Asn | Arg | Gly | Val | Asn | Asp | Ile | Ser | Ser | Arg | Ala | Met | Arg |
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| Asn | Asn | Phe | Arg | His | Tyr | Phe | Ile | Glu | Pro | Ser | Gln | Leu | Lys | Leu | Phe |
| | | | | 325 | | | | | 330 | | | | | 335 | |
| Tyr | Asp | Val | Xaa | Thr | Trp | Ile | Val | Asn | Ser | Ser | Ser | Asn | Lys | Leu | His |
| | | | 340 | | | | | 345 | | | | | 350 | | |
| Xaa | Xaa | Xaa | Ile | Cys | Ala | Ser | Phe | Tyr | Xaa | Thr | Ile | Thr | His | Xaa | Xaa |
| | | 355 | | | | | 360 | | | | | 365 | | | |
| Gln | Val | Arg | Phe | Ile | Ala | Gly | His | Thr | Gly | Ser | Ser | Ile | Met | Ala | Cys |
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